SHOULD DISASTER STRIKE

BE PREPARED !

World Health Day, 7 April 1991

Emergency Preparedness and Response
World Health Organization, CH - 1211 Geneva 27, Switzerland

THE 1991 WORLD HEALTH DAY INFORMATION KIT

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MESSAGE FROM HIROSHI NAKAJIMA, M.D., PH.D. DIRECTOR-GENERAL OF THE WORLD HEALTH ORGANIZATION ON THE OCCASION OF WORLD HEALTH DAY 1991

Today we celebrate the forty-third anniversary of the World Health Organization. During recent decades, we have seen significant advances in health, social and economic development. And yet this progress has been repeatedly interrupted and set back by man-made and natural disasters. We cannot pursue our long-term strategies for health for all without paying attention to this global problem.

WHO's definition of a disaster is: "Any occurrence that causes damage, economic disruption, loss of human life and deterioration in health and the health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area". Under this definition, a disaster occurs, somewhere in the world, almost every day. By its very definition it is clear that response to a disaster must involve all sectors of government and the whole community.

Unfortunately, it is virtually impossible to prevent most disasters. Nevertheless, we can forestall or alleviate many of their worst effects by anticipating them and by being prepared. WHO's concern is with reducing the adverse impact of disasters on human health, through preparedness and by bringing the right technology to bear in a timely, coordinated and effective manner, for each phase of operation, i.e., relief, rehabilitation and reconstruction.

Part of preparedness for disasters, as for any other condition of ill-health, is to have a sound understanding of the epidemiological situation and the ability to anticipate disaster events. WHO, in cooperation with governmental and nongovernmental organizations, and with other organizations and bodies of the United Nations system, is engaged in tracking the history of major disasters, in time and place and in magnitude of effects.

These data show, for example, that in 1988 alone there were 74 major floods, 5 cyclones, 11 hurricanes, 34 giant storms, 17 landslides, 17 earthquakes, 18 droughts and 162 major accidents, of a magnitude exceeding local and national capacities to cope. By way of recent examples: the earthquake in the Islamic Republic of Iran in June 1990 took an estimated 40 000 lives and left half a million homeless. In the Chinese province of Hunan, floods caused by torrential rains followed by violent storms affected some 20 million people, with direct economic loss in the order of US$ 435 million.

The greatest number of disasters occur in those countries that are already most adversely affected by ill-health and poor economic conditions. Most types of natural disasters are apt to recur in the same countries or areas. Furthermore, with the continuing deterioration of the environment, including deforestation and misuse of land, we have every reason to believe that the frequency of disasters, such as flood and drought, will increase in the coming decade.

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By better monitoring the weather and climatic patterns over time, we can anticipate some types of disaster. We can reduce the impact of such events when they occur, for example, by planning and designing buildings correctly, starting with the health facilities, which could also serve as models of construction. We also know that certain sequelae of specific types of disaster occur repeatedly, including epidemics of diarrhoeal diseases with floods, malnutrition, if not downright famine, with prolonged drought, and burns from volcanic eruptions or forest fires. This has allowed us to prepare for and respond in the most efficacious way to a specific type of disaster.

Unless response is properly coordinated, the well-intentioned donor community may end up by supplying excessive amounts of some types of supplies, while ignoring others that may be needed more. Standard lists of supplies can be useful in responding to defined emergency situations. As important as the immediate response to the emergency is the long-term rehabilitation and reconstruction of the affected area. And this should be considered as part of emergency preparedness.

International solidarity and cooperation are essential to reducing the adverse effects of disasters. For this reason, the United Nations has declared the 1990s to be the International Decade for Natural Disaster Reduction. It is particularly appropriate that World Health Day this year should draw attention to how we can reduce the impact of disasters. *Our slogan is:*

SHOULD DISASTER STRIKE - BE PREPARED!

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BE PREPARED !

World Health Day, 7 April 1991

FACING DISASTER ON YOUR OWN TERMS

by Valery Abramov, Information Officer, WHO Geneva

Open a newspaper and, no matter what part of the world you happen to be in, you are bound to read reports of all sorts of natural and man-made disasters.

The only consolation is that it has always been that way, even in pre-Gutenberg days. Unfortunately, there was no reporter on the spot to record a scoop on the day that the dinosaurs and other prehistoric heavies vanished. Whatever sealed their fate is still being hotly debated by palaeontologists. Whether a meteorite struck the Earth, or the climate simply got colder, it was certainly a disaster of dinosaur-size proportions.

Recorded history and mythology are peppered with natural disasters. Noah's survival during the Flood made the equivalent of a "front page story" in the Bible, and from the same source we find reference to the destructive power locusts under the subheading The Plagues of Egypt. These voracious insects still terrorize vast areas of the African continent.

The Black Death (1347-51) and the Great Plague (1664-65) - those ugly pockmarks on the face of human history of disasters - can fortunately be consigned to the past. In those times, infectious diseases were seen as inevitable natural disasters, "acts of God" one could not do much about. Medicine and the natural sciences have gone a long way since those days. Worldwide smallpox eradication since 1980 serves as a good illustration. But even today, malaria and yellow fever epidemics still take an unacceptable toll of human lives in different parts of our planet.

The present century has added a new ecological dimension to the definition of disaster. Chemical and nuclear catastrophes, oil-spills, air, water and soil pollution, desertification, the greenhouse effect and environmental refugees - all these emphasize the simple truth that development can be destructive. We then have a man-made disaster on our hands.

The last Ice Age brought about the biggest climatic changes in human history. Now, at the end of the 20th century we are awakening to the fact that the global weather could be changed by human activities. The build-up of carbon dioxide and other heat-trapping gases in the atmosphere - the greenhouse effect - may bring about truly catastrophic consequences - from prolonged drought to the rise of sea level. Should the latter happen, such low-lying cities as Bangkok, Calcutta, Dhaka, Hanoi, Karachi and Shanghai - among the most densely populated and sprawling habitats in the world - would be underwater. None of these would be rich enough to pay for multi-billion dollar projects for the construction of seawalls, embankments or tidal barriers.

A case in point is Bangladesh. Lying in the delta of three mighty Asian rivers - the Ganges, Brahmaputra and Meghna with their 230 tributaries, it faces floods as regular annual events. But there are floods and floods. The one that hit the country in 1988 was the worst in living memory, claiming the lives of over 1500 people and damaging more than 50 per cent of district hospitals. As the "Low Countries" of South-East Asia, Bangladesh also suffers from storm surges from the Bay of Bengal, crushing everything in sight up to 160 kilometers upriver.

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The killer cyclone of 1970 roaring in at 220 kilometers an hour took 200 000 lives, drowned millions of livestock, damaged 85 per cent of housing and destroyed most of the Bangladesh fishing fleet. As if that were not enough, during the dry season from October to May, when river flow is sharply reduced, and drought sets in. The terrible famine of 1943 killed nearly two million people.

The only natural phenomena to match floods and tropical storms in terms of death tolls and physical damage are earthquakes. According to Indian mythology, the Earth rested on the head of a giant elephant and when - either out of sheer boredom or discomfort - it shook its head, an earthquake occurred. Modern science, with a better understanding of the physics of the geological strata, shows that most earthquakes result from grinding movements of the Earth's crust - slow-motion collisions of the "floating continents".

Yet despite our studies of plate tectonics, science still cannot make accurate short-term predictions of the time, size and site of seismic disturbances. In 1975 the Chinese got it exactly right, and no loss of life followed the Manchurian tremor of 7.3 magnitude on the Richter scale. But the very next summer, without warning, the Tangshan earthquake left a quarter of a million dead and practically wiped out a major industrial city.

Why are some countries more prone to natural disasters than others? The overall amount of economic damage and loss of human life seems to be directly linked to the level of a country's development. The less developed countries appear to be disproportionately hit by natural disasters, and it is the have-nots of this world who suffer the most.

Japan and the United States of America have had more than their fair share of natural disasters; both Tokyo and San Francisco have suffered from two major earthquakes this century. But rigorously enforced building codes, which prevented shoddy work and the use of inappropriate construction materials and techniques, ensured that the loss of life in each case was not catastrophic.

Poorer countries, where crudely built squatter settlements sprawl around the big cities, suffer huge death tolls when the earth shakes.

Similarly, overcrowded conditions and makeshift housing, lacking the most basic services and facilities, are much more vulnerable to floods, wind storms or landslides.

Though the great plagues may have gone for good, disease still lays waste human lives. In Latin America, for example, the Aedes mosquito staged a successful come-back and triggered an epidemic of dengue fever which still causes between 30 and 60 million infections a year. Both dengue fever and malaria can be linked to overcrowding and insanitary conditions. Products of the "disposable culture", like old tyres or discarded food containers, have multiplied the potential breeding sites for the mosquitos that spread these diseases. Dengue has already spread over most of the tropical world, threatening almost half of WHO's 167 Member States.

From time immemorial, natural disasters, warfare and ethnic or religious feuds, have had one common feature: they produce floods of refugees. Their numbers have mushroomed in the last two decades. Twenty years ago there were about 2.5 million; 1980 saw the figure jump to 8.2 million. At the beginning of the 1990s, the UN High Commissioner for Refugees (HCR) officially recognized nearly 15 million refugees. But that is only the tip of the iceberg. In Africa alone 35 million live outside their country of origin. Ten million people worldwide, fleeing from environmental degradation, constitute the largest sector of the displaced.

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According to United States data, between 1900 and 1988, some 47 million people worldwide became homeless due to natural disasters, and a large majority of them subsequently moved to other areas. Nearly eight million refugees, now live in the misery and squalor of camps and settlements, depending almost entirely on food aid. A generation of children has been born and raised knowing their homeland only from stories told by their parents. Mortality rates among these populations, especially during the acute phase of displacement, are exceptionally high - up to 60 times the expected rates - and so are psychological disorders, including depression and anxiety.

Refugee and displaced persons' camps put enormous additional pressure and responsibility on the limited, and overstretched, public health services of the host country. Provision of humanitarian aid and assistance of the UN agencies, donor countries and individuals is absolutely indispensable.

The World Health Organization (WHO) has been involved in disaster preparedness and relief operations from the very early days of its existence. Today, WHO's presence is felt in virtually all trouble spots around the world. It showed quick reflexes by providing timely aid and technical assistance during the earthquakes in Iran and in the Philippines, and floods in China in 1990.

WHO's Constitution pledges to furnish necessary aid in disasters to Member States, and its Regional Offices have set up their own Emergency Preparedness and Relief Programmes. Apart from "traditional" emergency relief and assistance in case of natural disasters, epidemics and other calamities, WHO puts emphasis on the reduction and management of disasters. In practical terms, WHO focuses on training in preparedness, assessment of health needs, information and communication and planning for post-disaster activities. It sees its main role as helping Member States to make workable arrangements for emergency preparedness plans on a nation-wide basis. Like a crossword puzzle, such arrangements are both vertical and horizontal and contain a variety of answers to the clues. In an emergency situation the health sector cannot work in isolation, but must harmonize its efforts with the local community, civil defence, army, police, fire brigade and various nongovernmental bodies. Any shortfalls of coordination and cooperation may result in additional damage when disaster strikes.

So regular training of "emergency" medical personnel is, literally, of vital importance. The complete programme includes immediate care, triage, casualty evacuation, emergency treatment in hospital, psychological assistance to the community and provision of medication as well as safe water and sanitation. One of the more persistent myths about disasters is that they are harbingers of epidemics. Epidemics occur only rarely; but when they do, the usual culprits are substandard water and sanitation supplies.

Swift provision of locally-stored, correct medications must figure high on the list of priorities of the public health services. Lack of them, or the provision by well-meaning neighbour countries of inappropriate, out-of-date, or incomprehensibly-labelled medication, can snowball into a major handicap. A sad example is the 5 000 tons of drugs and medical supplies sent to the site of the 1988 Armenian earthquake. Most arrived unaccompanied and without inventory lists; 20 per cent of the entire shipment had passed the expiry date; and as many as two-thirds of the packages, being labelled in 21 languages with brand rather than generic names, were delayed because of identification problems. Disposing of the unusable drugs could have caused an ecological disaster of its own, so a special incinerator (to burn them at the required 1200°C) had to be imported.

This experience confirmed once again the necessity of streamlining both national and international efforts. And that is precisely what the United Nations International Decade for Natural Disasters Reduction (launched in January 1990) is all about. Communities, governments and nations have to be prepared, and disaster management today lays emphasis on pre-disaster planning and preparedness. In other words, people need to know what might hit them and how they can soften the blow.

First aid training at the grass-roots level has high priority, especially in disaster-prone areas. In real life situations it is often the only way to save lives. Emergency teams, communications and logistics, hazard mapping as well as scenarios of potential disasters all contribute to Disaster Preparedness. Once in place, these separate factors have to be properly maintained and looked after at all times.

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DISASTER PREPAREDNESS - A WORTHWHILE INVESTMENT

by Mrs Patricia Bittner, Emergency Preparedness and Disaster Relief Coordination Programme, AMRO, Washington

Without warning, sudden-impact disasters such as earthquakes can wreak havoc and set a country back years in its development. In September of 1985, Mexico City lost the use of more than 5 000 hospital beds in just minutes. Even hurricanes, which offer some warning, can be notoriously fickle. An unexpected, rapid shift in pressure or winds will cause the storm to veer miles off its predicted course, and islands previously believed to be safe can experience nationwide destruction. Hurricane Hugo had almost descended upon several Caribbean islands by the time its path was completely evident, leaving them little time to prepare.

How can countries and communities respond to these potential threats? Generally they choose one of two options. One time-honoured approach is to simply do nothing, resigning themselves to the fact that disasters are acts of God. Inaction may also be a political choice, as governments decide to invest their resources in today's real problems instead of in tomorrow's possible calamities.

The other approach, which is more common and makes more sense, is to invest, in prevention and preparedness measures commensurate with the risk factor and the country's resources.

Prevention versus Preparedness

Prevention measures are designed to lessen the physical impact of disasters, and consequently, reduce the loss of lives. Adopting and enforcing earthquake building codes, for example, helps ensure that hospitals and health facilities will continue to function after disasters and not become death traps for personnel and patients. Prevention measures can also include passing legislation that affects urban planning and public works by determining where not to construct or locate key facilities. The earthquakes in El Salvador and Mexico, where hospitals suffered considerable damage, are powerful reminders to other countries.

Preparedness, on the other hand, while accepting the inevitability of disasters, focuses on how to lessen their effects on the population. Effective health preparedness measures enable communities and health institutions to provide a quick, organized response to disasters. Disaster preparedness involves understanding the threat; preparing operating plans to deal with likely scenarios; and educating and training health officials and workers, as well as the local community to deal with a large number of injured persons.

Training - A key to Preparedness

Maintaining a state of preparedness, year after year, is challenging and costly. Long periods of relative calm between disasters dim the collective memory. Prior to Hurricane Gilbert in 1988, 28 years had elapsed since a major hurricane visited Jamaica. An entire generation had no first-hand knowledge of the potential fury unleashed by a killer storm.

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Training is one WHO strategy for improving disaster preparedness in the health sector. In recent years, the scope of training in the Americas has broadened substantially. Initially, it focused on teaching top-level health managers how to make decisions under crisis circumstances. Today, emphasis is shifting increasingly to training first responders, coordinating operations among different sectors, and community education.

First responders are local health workers and leaders who will respond to the immediate disaster impact - before external health assistance can be mobilized from the capital city, or, (much later and often too late) by the international community. WHO has supported training in areas such as mass casualty management, medical triage and classification of large numbers of victims, establishing and activating hospital disaster procedures, providing safe water or basic food, and managing shelters or refugee camps. Local health workers are trained to provide emergency care with the resources they have available, even though these are usually modest and sometimes almost non-existent. Helicopters, extensive radio networks, sophisticated rescue vehicles and well equipped trauma centres are just not available in most countries in the Americas. Likewise, it is unrealistic to expect developing countries to have on hand disaster stockpiles of drugs and equipment when even in "normal times", children's lives are lost because of a shortage of several dollars' worth of essential drugs.

School children and their teachers are some of the most receptive groups to disaster preparedness education and training. In Costa Rica, the health and education sectors have joined forces to organize courses to help teachers deal with disaster situations that threaten the health of their students. These children, in turn share this valuable education with family and community. Recognizing the value of school children as "multipliers" of disaster information, a multi-media educational project is currently underway in five Latin American countries to educate children, aged 8 to 12, about the health hazards of natural disasters. This strategy is proving its long-term effectiveness.

The universities of the Americas also provide a fertile ground for disaster preparedness training, although incorporating disaster preparedness into the educational curriculum of all health professionals - doctors, nurses, administrators, sanitary engineers, etc - is a lengthy process. Despite the diversity of autonomous universities in the region, the benefits of acquainting the next generation of leaders with the effects of disasters on health have been amply demonstrated in many real-life situations.

Preparedness and Development

In the last ten years, the Ministries of Health of Latin America and Caribbean countries have strengthened their resolve to consider preparedness as both a development priority and an investment in the future.

No real preparedness effort can exist in isolation and health sector preparedness is no exception. To be truly effective, the health sector must involve other groups in working towards a common goal. In Latin America and the Caribbean, these groups have included Civil Defense, Ministries of Foreign Affairs, Red Cross Societies, as well as the private sector.

A large corps of well-educated disaster specialists would undoubtedly alleviate many post-disaster problems. But technical skills alone are not enough. Coordination among national agencies is essential. And often this type of coordination has opened the door to permanent, improved dialogue among many different national sectors.

One successful example of this collaboration is the series of special workshops on post-disaster health assistance that WHO has held throughout the Region of the Americas for diplomats and personnel from the Ministries of Foreign Affairs. If a disaster strikes in their home country, these diplomats, especially those stationed in donor countries, will often have to make rapid decisions without the benefit of official instructions from the Ministry at home. Preparedness training has helped to ensure that diplomatic or consular missions abroad know how to guide a concerned public in providing effective post-disaster aid.

Disaster prevention and preparedness are an integral part of development activities. But what about disaster relief? Is international emergency humanitarian assistance consistent with development priorities? Not always ...

The generosity and solidarity that we witness after a sudden-impact disaster could be better utilized if it could be guided to areas of more critical need, even though these may be less visible. The reality is that once the critical emergency phase has passed, and the disaster is no longer making worldwide headlines, interest and aid plummet - precisely when help is most urgently needed for longer term problems. Therefore, to be truly effective, external assistance should complement local efforts and contribute to closing the development cycle by leading to rehabilitation and reconstruction of a better, safer environment.

Failure to couple emergency relief assistance with ongoing support to prevention and preparedness will only perpetuate the vulnerability of the population and foster dependency. This is reflected in the words of a disaster manager from a country affected by floods, who gives new meaning to the term flood cycle: "First we were flooded by water, then by unsolicited supplies and experts, and now we are flooded by international meetings and workshops".

Natural disasters will continue to be a real and present threat in most parts of the world. But for the countries that have invested in disaster preparedness, carefully cultivating, allocating an deploying scarce human and material resources, the investment is paying off.

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ENCOUNTERING THE FLOODS ON A RAISED HOMESTEAD

by Mr Ahmed Fazl, Assistant Editor, The Bangladesh Times, Bangladesh

Kalim Mollah looks wistfully at the rusty nail he had hammered into the old jackfruit tree marking the level of water in the 1988 great flood which washed away his mud hut and drowned three of his children. Water from the Padma river has once again surrounded the village Fulbari since the monsoon rains pounded the flood plains, but the defiant rice farmer has raised the level of his homestead and put his hut on bamboo stilts.

"Even if the water reaches the 1988 level, my house will now remain dry", Mr Mollah, aged 35, said as he pointed to the old jackfruit tree which survived the worst flood to hit Bangladesh in living memory.

Mr Mollah had to flee the village with his wife and two surviving daughters in 1988 and take refuge for five weeks in a cramped flood shelter in the capital Dhaka 25 km away. But as the water receded, leaving an agonizing trail of destruction and human misery, Mr Mollah and other villagers returned to the ruins and rebuilt their huts on new hopes.

The flood had devastated almost three-fourths of Bangladesh and displaced more than a quarter of the country's estimated 110 million people. Thousands of hectares of rice fields were washed away, hundreds of bridges demolished and power and telephone lines uprooted. An estimated 2000 people were either drowned or died due to malnutrition and flood-related diseases.

But the nation had swung back from the ravages of the catastrophe into the hard realities. Mr Mollah is not the only one in his community who has raised the floor of his house above the flood level of 1988. Others have taken similar steps and the village of Fulbari is prepared to face any future flood.

"If the Padma rises again, we have better ideas of meeting the threat", Rahim Sardar, the village headman, said. "Not only are our houses on a higher platform, we know how to survive in the water and tackle the aftermath."

Mr Sardar had been to a workshop, organized by the Ministry of Health and funded by the World Health Organization, where he sat with doctors, health workers, agricultural officials, fisheries experts and relief agencies discussing how Fulbari's villagers will face a future flood.

The workshop is part of the government's and the local community's response to devastating floods, which have recurrently visited the country. Washed by the three major rivers in the world, the Brahmaputra, the Meghna and the Ganges, and hundreds of their tributaries, floods in Bangladesh are an annual event. When the three river basins rise at the same time with the monsoon rains pounding the plains, devastating floods like those in 1987 and 1988 occur.

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Neither history nor geography have been kind to Bangladesh. One of the least developed countries in the world, it went through centuries of colonial rule. Burdened with a large population, its geographical location, climate and ecology are all in favour of causing both natural and man-made disasters - floods, cyclones, tidal surges and drought.

A cyclone racing in from the Bay of Bengal in May 1985 devastated the southern coast of the country, wiping out an entire coastal island with over 11 000 people. But repeated natural disasters have enhanced the resilience of the community to tackle the calamities.

"If a disaster strikes now, we are in a better position to handle it", said Dr Aftabuddin Khan, Assistant Director in the Directorate General of Health Services. Dr Khan has conducted two workshops in Saturia and Bhuapèur upazilas (counties) with doctors, paramedics and community leaders on disaster preparedness. The purpose of the workshops is to measure the level of preparedness to face a sudden disaster and also to involve the community in preparedness strategies. These have led to the formulation of a local plan of action to meet disasters.

"We have taken drugs and other relief materials to the upazila town from where they can be distributed to the villages during a crisis", Dr Khan said. The locally-elected upazila chairman leads the crisis management team.

If the model plan at Saturia succeeds it will be replicated in the 30 upazilas which have been identified as most vulnerable to disasters. The selected upazilas are part of the network of a dsaster preparedness strategy at the multisectoral and health sector levels, which is the outcome of the assessment of Bangladesh's national and health capabilities to respond to disasters. WHO sponsored the study, the findings of which led to an interim emergency project in the selected upazilas.

This project has focused on three main aspects: the training of key personnel, stockpiling critical items, and the development of transportation and communication systems. At least one medical officer and one health assistant, in charge of epidemiological assistance, are involved in the training. A special buffer stock of essential medicines is being built up and a list of critical items has been prepared. For speedy transportation to carry out relief work immediately after a disaster, each upazila has been provided with a mechanized boat. Police communication networks in the rural parts of the country are to be used for the transmission of data concerning epidemiological surveillance and assessment of needs.

Disaster preparedness in Bangladesh has been a multisectoral effort. It incorporates weather forecasting to provision for pure water supply. The meteorological department is being modernized and is linked with similar organizations in the region via satellites. Experts from the Water Development Board regularly monitor the levels of rivers and keep the people aware of the changes. Seeds of crops are being developed which will be flood resistant or can be planted and harvested before the onset of the flood season.

For speedier transportation of relief goods, including life-saving medicines, heliports have been built in each of the 460 upazilas. At least one multi-purpose concrete shelter for every cluster of villages is being constructed. The installation of tubewells on sufficiently raised lands has started and the inland transportation system is being upgraded.

After the 1988 flood, disaster preparedness has been organized at the highest level of the government with the formation of the National Disaster Council which advises the government on disasters and adopts speedy remedial measures in such situations. The members of this Council include Cabinet Ministers, political leaders, technocrats, scientists, voluntary agencies and journalists.

A 15-point mid-term and long-term plan has also been approved as a strategy for mitigating and preventing effects of disasters. These include dredging of rivers, improvement of flood warning systems, construction of embankments, shifting of food warehouses to higher lands, and modernization of country boats.

At the level of the health sector, a "General Coordination Committee" has been formed within the Ministry of Health to coordinate and supervise health programmes, during and after a disaster. A general directory of the key personnel exists in the main Control Room for disaster management, within the Directorate General of Health Services. This directory helps in calling up people at short notice who are required during emergencies.

A critical list of medical supplies is also kept handy. Oral rehydration salts for the treatment of diarrhoea and other intestinal disorders are stored, and the country is in readiness to increase production of these salts during and after a disaster.

Pure water supply remains a key factor in the control of an epidemic. In the rural areas more tubewells have been sunk and in the major cities of Dhaka and Chittagong, the Water Supply and Sewerage Authority, a public sector body, have taken steps to protect the water pumping stations from being submerged under flood water. New deep tubewells are being installed and a greater number of pump stations in the two cities will supply more water to the dwellers.

A Health Disaster Preparedness and Management Committee, set up at the district and upazila levels, will develop village and union emergency teams and prepare action plans. These will incorporate the local development plans and are based on the vulnerability of the areas. At the local level, medical officers dealing with emergencies will serve as the focal points.

In Bangladesh, the future strategy for dealing with disasters relies, to a great extent, on the experience gathered by the professionals and the community through their continuous fight against disasters. The community is being sensitized to disaster preparedness and given basic techniques for dealing with emergencies through booklets distributed among the people. "Health Programmes to Combat Disaster", prepared by the Ministry of Health, provides basic information to the common man.

Bangladesh is prone mainly to two types of disasters: floods and cyclones. The sufferings in the 1988 flood have led to a national commitment to face future onslaughts on a multisectoral plane. But there has always been a strong involvement of the community. Farmers like Kalim Mollah have their individual responses to disasters. These individual responses combined strengthen the community and national response to disasters.

"We cannot prevent disasters, but if one comes in the future we can handle it much better", Dr Khan said. The country is extremely vulnerable to natural disasters, but since the early settlements in the world's largest delta centuries ago there has always been a national determination to face up to the ravages of nature.

WHD3/1991

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PREPARING FOR THE WORST - SUDAN LEARNS FROM HARD EXPERIENCE

by Dr David Robinson, WHO Representative, Sudan

And it rained...

Sudan, in common with the other countries in the Horn of Africa, has had more than its fair share of disasters in the last decade. There have been droughts and floods, famines, locusts, epidemics and the terrible, drawn-out agony of civil war. Disasters and emergencies have almost become a way of life and the probability of emergencies arising is always present in the minds of health planners and managers.

One of the results of the sequence of disasters in Sudan has been the movement of millions of people away from their homes in the South and West of the country towards the North and East, and particularly to the area surrounding Khartoum, the capital. There they live in temporary settlements, in houses made from mud and sticks at best and from cardboard and rags at worst. These displaced people, around a million of them, live on the fringes of the economy and are the first to be affected when prices go up and food and essentials become unavailable; their settlements are not planned for in the provision of health, water, sanitation and educational services; they are cut off from their usual environment and social structure. In short, they are "at risk".

In August 1988 as much rain fell in one night on Khartoum as usually falls in more than two years. The sheer weight of the rain destroyed tens of thousands of the homes in the displaced settlements. Suddenly, Khartoum was a disaster area. Hundreds of thousands of people suddenly had nothing. They needed - immediately - shelter, food and water. But it was worse than that, because the environment in which they were forced to live was effectively a vast lake contaminated with sewage from the open latrine pits. The risk of epidemic diarrhoea and dysentery was very great. In addition, the borderline state of health of many of the children gave them few reserves upon which to fall back in the event of food shortage or the appearance of measles or other epidemic diseases.

The Government responded extremely quickly. With support from the International Organizations, major donors, and the nongovernmental organizations working in the country, they began to arrange tented shelter, to set up water supply lines with tankers and to arrange for food to be brought to the people, and particularly the children, most in need. In the Ministry of Health an operations room was organized into which information from the various concerned bodies and health units was fed, special surveys were organized and the response coordinated. Teams went to the affected areas to vaccinate the children against measles, manage any acute illnesses, particularly diarrhoea, and assess their nutritional status. The least well nourished were referred to feeding centres. At the same time the diarrhoeal diseases programme was ensuring that oral rehydration salts were available and that health staff were properly trained in its use. The malaria programme organized action to prevent the epidemic of malaria which it was feared would result from the enormous increase in mosquito breeding in the flood waters.

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And then...

Slowly the water went down and life returned to its precarious normal for the people around Khartoum. The emergency had been a "success" in some ways and the Ministry of Health was justly proud of what it had done. But when it was all over the same Ministry began to ask questions like "could we do as well as that everywhere in Sudan?" and "what can we learn from this that we can use to make us more able to handle emergencies in the future?"

Learning to cope

Sudan, with support from WHO and UNDP, has therefore started developing emergency preparedness as a function of the planning and management of the health system. A national workshop was organized with representatives of all the national bodies involved in emergencies to look at what should be done. Following this, a committee was formed with representatives of the major programmes in the Health Ministry and it drew up a plan whose aims were to improve the epidemiology, information and communication systems in the regions and in Khartoum, to strengthen the organization and forward planning of the technical programmes of the ministry and to improve the organization and coordination of the health service response to emergencies by the regional health authorities and the central Ministry of Health.

The emphasis on the regions is particularly important because in an enormous country like Sudan it is quite impossible to take care of everything from the centre. The aim is to localize health emergencies as much as possible. Regions should be able to handle their own emergencies, only calling for central help if the situation threatens to get out of hand.

1. Finding out what is happening - the information system

With the right information it is possible to predict problems so that action can be taken before they become emergencies. Drought and famine do not happen overnight; epidemics often start with a single case and then move across the country in a predictable fashion; in a country which depends on its river system, even floods can be foretold at least a few days in advance. The early warning system in Sudan already provides information on rainfall, planting, crop yields and prices and locust breeding. To this the health sector will add news about the movement of people away from threatened areas, information on the nutritional state of children, and the occurrence of epidemic diseases such as meningitis, cholera and malaria. Tied in with the information that has been available for years through the routine health information system on the resources and activities of the health services, these items will give a comprehensive picture of what is about to happen, what is happening and what is being done to combat the problem.

For this to work each region will have an epidemiology cell within its health ministry, who will help the health service managers to pull their information together and interpret it, to go and investigate trouble spots and to keep the programme managers informed. Some regions already have this. All will have by the middle of 1991. But these are not just emergency units. Their job is really to help the regional managers to use the ears and eyes of the information system so that they are in a better position to run their programmes, whether there are emergencies or not.

Communication is a problem in a country as big as Western Europe, so a priority of the programme is to improve the radio network. At the moment only five of the 12 regional capitals, and seven of the provinces, are linked to Khartoum and each other. By the end of 1991 all regional capitals and the majority of the larger provincial capitals will be in the network as well. For the first time it will be possible for regional workers to keep in touch with Khartoum, pass on urgent or routine information and ask for help when they need it. A new era.

2. Preparing the programmes

When health emergencies strike it is the local health services that must take the first actions. These must be right or lives may be lost and time wasted. Each of the programme areas that is likely to be involved in emergencies - control, of diarrhoeal and epidemic diseases, immunization, environmental health, malaria, nutrition and so on - has worked out or is working out a set of standard procedures to be used throughout the health system. For example, there are standard procedures for carrying out quick nutrition surveys and for setting up feeding centres, the immunization programme has a standard procedure for mobile teams to give mass immunization of children against measles in conjunction with nutritional advice and surveys, and there are standard treatment schedules for meningitis and cholera. A handbook on action to take in emergencies has been prepared by the ministry for distribution as a training guide and for reference.

Materials on emergencies and standard procedures are being made a part of the basic and in-service training of health personnel throughout the health service, from doctors to dispensary workers. At the same time, key health workers are being selected from each region and from the central Ministry of Health for short training courses in Geneva, Brussels or Addis Ababa on the management of various types of emergencies.

One of the lessons of the 1988 flood was the importance of having stocks of the right medicines and vaccines in the right place at the right time. Regional and national health planners are being urged to include in their estimates minimum emergency stocks which can be kept in suitable stores for use in emergencies. This is a complicated business: with daytime temperatures usually well over 40°C, Sudan is a graveyard for drugs and vaccines unless they are stored well and turned over regularly.

Helping the managers

As Sudan has learned from many emergencies, all the plans, supplies and trained staff are of little use if they are not properly coordinated. Except where the emergency is of national proportions, coordination is the job of the regional health authorities. In each region an emergency coordination mechanism is being set which will be able to bring together all the various departments and sectors needed to cope with an emergency.

At central level this coordination includes the essential links with the international organizations and donors who must be kept informed so that they can offer appropriate support if required.

Health emergencies affecting Sudan often do not start or stop at its borders. Epidemics, in particular, move from country to country. The epidemic of Cerebrospinal Meningitis which caused the deaths of over 6000 people in Sudan in 1988-89 was a part of the pandemic that sweeps through the Sahel every few years. By improving communication with its neighbours, Sudan can both gain time to prepare for such epidemics, and be able to give advance warning to them of the progress of the epidemic and the treatment that is proving most effective against it. WHO is working with the countries of the Sahel to make this possible.

And so...

By improving information and communication, learning from past experience, thinking ahead and accepting that health emergencies are a fact of life whose prevention and management must be part of the fabric of the health system, Sudan is building up the ability of its health services to cope with problems before they become emergencies. The Government and WHO believe that although Sudan may be among the first to take this road it will be followed by many other poor countries.

SHOULD DISASTER STRIKE

BE PREPARED !

World Health Day, 7 April 1991

CHEMICAL DISASTERS: IS EUROPE READY?

by Philippe Stroot, Information Officer, WHO Geneva

Irreplaceable as a mainspring of scientific and technical progress, chemistry is omnipresent in our world today, for better or for worse. For better, we have everything that makes human life possible, easier and better, from the production of medicines to fight disease to the raising of farm productivity, not to mention the development of an astonishing variety of materials with the most incredible properties that make literally everything possible. Far worse, of course, there are the risks that improper, careless or ill-intentioned use entails for health and the environment.

And worst of all is certainly the sudden, unforeseen chemical disaster whose effects may assume terrifying proportions: the names that immediately spring to mind are those first of Bhopal, the martyred Indian town, but also of Seveso and Basle, to mention some of the most recent cases.

Even though the Bhopal disaster was by far the most tragic in the history of modern chemistry, the fact that two European towns are on this very incomplete list would be enough to show that this kind of unpleasantness does not happen only to others and that the industrialized countries are not immune to such disasters.

Does that mean they are better prepared to cope with them? The above-mentioned catastrophes have unquestionably drawn the attention of the public and the authorities to the risks inherent in the manufacture and transport of chemicals and the need to guard against every eventuality. For, while the risk of industrial accidents, in the chemical or any other area, can never be completely eliminated, we can nevertheless take a number of measures aimed at preventing such disasters wherever possible and at limiting the damage to health and the environment.

The United Kingdom in the Vanguard

The management of health problems resulting from chemical disasters was the subject of a symposium held last year in London under the auspices of the Royal Society of Medicine and the International Programme on Chemical Safety (IPCS). Participants were given, in particular, an idea of the extent of the efforts undertaken in the United Kingdom, a front-runner in this area, to prepare for coping with possible chemical disasters. Under a set of regulations designated by the acronym CIMAH (Control of Industrial Major Accident Hazards) 1984, it is incumbent upon the country's local authorities and emergency services to be ready to cope with accidents involving certain types of chemical installation. The industrial sites to which these regulations apply are those where dangerous substances meeting clearly defined criteria of toxicity, inflammability, reactivity or explosiveness are stocked or used. Several thousand substances falling within this category are in everyday use in industry. Those in charge of such sites are required to report any serious accident, indicating the measures taken to prevent its recurrence. Even a potential accident liable to cause damage is considered as serious. They must also be ready to supply proof, if an inspector asks for it, that the possibility of a serious accident has been taken into account and that everything possible has been done to prevent it or, failing that, to mitigate its consequences.

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These regulations also contain express provisions applicable to sites used for storing very large quantities of certain flammable or explosive toxic materials or other particularly dangerous substances. In such cases those in charge are required, in addition to the above-stated obligations, to prepare emergency action plans, inform the public, and provide the competent authorities with full particulars of the risks entailed and the safety measures applied.

From incident to disaster

As defined by the Commission of the European Communities, a chemical incident is "any incident connected with an uncontrolled development (such as a leak, fire and/or explosion) of an industrial activity involving a serious, immediate or delayed hazard to man and/or the environment." On that basis, we can speak of a chemical disaster when the population thus threatened is large. The criteria for evaluating the seriousness of such a disaster include not only the size of the population at risk, but also the area of the contaminated zone, the quantity of chemicals involved and their toxicity. The extent of the measures that must be taken to cope with the accident and mitigate its consequences is another determinant of its severity, even though, as already stated, the decisive factor is not so much the actual number of victims as the potential risks incurred. There can, for that matter, be outright disasters that entail no loss of human life but have catastrophic consequences for the environment. A case in point is the great oil spills which pollute the sea and cause sometimes irreparable ecological damage.

As chemical safety is obviously a problem that concerns all countries, active international collaboration is indispensable for planning and implementing effective control measures, for strengthening health education programmes aimed in particular at promoting public awareness of the importance of this problem, and for pooling information and experience in the sphere of prevention and management of chemical accidents.

Such collaboration is the business, in particular, of the International Programme on Chemical Safety (IPCS) launched in 1980 by the World Health Organization, the United Nations Development Programme (UNDP) and the International Labour Organisation (ILO). Since its inception this intersectoral programme has been studying the risks which the utilization of an ever-increasing number of chemicals all over the world entails for health and for the environment. In close cooperation with the Member States, it is trying to improve their national capabilities in the sphere of chemical safety, particularly with regard to emergency preparedness, whether for minor incidents or for major chemical disasters. The events of latter years, together with the ever clearer realization of the close links between health and the environment, have considerably enhanced the importance of this programme, not only for the industrialized world but also for the developing countries.

Information and Training

In view of the actual nature of the risks inherent in chemical accidents, which can bring into play countless substances many of which are of ill-determined toxicity, information and training are of key importance. Information has to serve as the reference tool for the training of teams liable to be faced with emergency situations and of all those who, being potentially exposed to chemicals, must work actively to put into effect the best means of protection, which is prevention.

For this, however, the information provided must be adequate and not limited to an outline of the toxicological properties of the chemicals concerned. It is important that it should also comprise an evaluation of the actual danger that those properties may constitute for health and for the environment under realistic conditions of exposure to the chemicals concerned. The International Programme on Chemical Safety is specifically responsible for this indispensable evaluation of the risks, and this is reflected in particular in the regular production of International Chemical Safety Cards and of monographs on poisons.

The International Chemical Safety Cards, prepared under a cooperation agreement with the Commission of the European Communities, collate all the essential health and safety data concerning chemicals used in industry, agriculture, building, etc. Their function is, of course, only to describe the intrinsic dangers of these substances, for their risks in practice will vary depending on the use made of them.

In the coming years the International Programme on Chemical Safety plans to produce some 2000 of these cards, which should greatly facilitate the task of all those responsible for the prevention of chemical disasters, not only in Europe and the industrialized world, but also in the developing countries, where unfortunately the consequences of the slightest accident often assume tragic proportions.

The monographs on poisons are prepared in close cooperation with a worldwide network of poison centres. They describe in particular how to diagnose and treat cases of poisoning. These monographs form part of a body of poison-control information software available in English, French and Spanish. Lastly, antidotes, which are particularly important for treating poison victims, are also the subject of monographs designed for the medical profession which provide evaluations of the clinical effectiveness of the antidotes used against poisoning with chemicals.

Notwithstanding all the efforts undertaken and the progress achieved so far, one thing at any rate is certain: chemical disasters are the most difficult to manage. For when they strike, it is not just a matter of treating wounds, fractures or burns as, for example, in the case of an earthquake or fire. We must also have precise knowledge of the effect of the substances concerned, and that is no small matter considering that only a tiny fraction of the 50 000 or so chemicals in everyday use has so far been subjected to thorough and detailed studies of their effects on health.

It is precisely because they are aware of the extent of the problem, and of the fact that their high technological level does not guarantee them against a disaster, that the countries of Europe are particularly active in the sphere of chemical safety. No one can, of course, assert that serious chemical accidents will no longer occur in Europe, but everything now seems to have been done to cope with them, should the need arise, with maximum effectiveness.

SHOULD DISASTER STRIKE

BE PREPARED !

World Health Day, 7 April 1991

COMMUNITY SELF-HELP VERSUS DISASTERS

Mr Brian Ward, Director, Asian Disaster Preparedness Centre, Bangkok

Countries in the Asia-Pacific region suffer more than their fair share of natural disasters - cyclone, flood, landslide, storm surge, earthquake, tsunamis, volcanic eruption, drought, forest fire; you name it, they have it.

Islands in the South Pacific are regularly visited by devastating cyclones; and when one hits a small island no area is spared. Cyclone Ofa which passed over Western Samoa in February 1990 was estimated to have caused approximately US$ 133 million of direct damage - nearly three times the country's revenue for that year - and that figure does not include secondary effects such as long-term loss of agricultural production. When a coconut tree is destroyed it takes up to seven years for its replacement to bear fruit. As an official in another Pacific island put it "we may not have a great deal to lose, but what we do have means a lot to us". The Cook Islands, the Solomons and Vanuatu have all experienced recent serious cyclone damage, though Fiji is in the unenviable position of having the worst record of occurrences.

"I don't know where I wanna go when the Rabaul volcano blows" was the refrain of a catchy song, and tee-shirt slogans, in Rabaul in 1983. Rabaul is a beautiful town in the province of East New Britain in Papua New Guinea, lying on the shore of a superb natural harbour. The only problem is that the harbour is in the caldera of an active volcano which has an unpleasant habit of erupting fairly regularly. The last major eruption was in 1937 when the whole town was destroyed and more than 500 people lost their lives. Barely two kilometres below the harbour bed lies half a cubic kilometre of magma waiting to burst out. In 1983 it looked as if it was going to do so and the town went to the second stage of alert in its well thought out preparedness plan. Full scale evacuation rehearsals were mounted. Mercifully the volcano had second thoughts and after a few months returned to its normal relatively quiescent state; but the watch goes on and, should the volcano ever show signs of increased activity, the town is well prepared. Rabaul is not Papua New Guinea's only active volcano; the country has several other vicious ones with records of thoroughly unpleasant eruptions; all are carefully monitored by the national Volcanological Observatory. Heavy rains are not unusual in tropical countries, but in March 1990 the district of Bialla in Papua New Guinea experienced 938 mm of rain in 24 hours and 3.81 metres of rain in a period of five days: that's an awful lot of water.

The Philippines learned long ago to live with cyclones; every year a dozen or so serious ones pass over the country; but as if that were not enough, the country was rocked by a killer earthquake in July 1990. With a magnitude of 7.7 on the Richter scale, the initial tremor lasted for about 45 seconds, the worst effects being in the area around Baguio City. More than a thousand people were killed, approximately 2500 injured, more than 23 000 houses totally destroyed, and approximately 70 000 partially damaged. The rescue operation saw many acts of heroism; a small boy who, undeterred by the continuing aftershocks, crawled into the ruins of a collapsed school, where adults could not squeeze, to bring succour to trapped children, said simply "I had to, they are my classmates". People rescued from collapsed buildings spoke of another young boy

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boy who had led them out. Afterwards, nobody to identify him and the story went around that they had been rescued by the Holy Child. Without waiting to be summoned, miners from nearby gold and copper mines moved quickly into the area bringing their hand-tools with them and applied their tunnelling skills to the search for buried victims.

China exemplifies the macro problem, the scale of which is mind-boggling. More than half of the population of over 1000 million live in flood-prone areas. The terrible Tangshan earthquake in 1976 killed an estimated 250 000 people. In an average year, disasters in China cause 30 000-70 000 deaths, affect 80-140 million people, necessitate the evacuation of two million people, destroy 5-10 million houses and affect 20 million hectares of land.

Asia-Pacific countries have been living with disasters for thousands of years and have developed scientific and social measures for dealing with them which deserve wider recognition. China has been constructing flood-control dykes on the Yellow River for more than 2000 years (its flood data goes back to 206 B.C.) and now has an astonishing 200 000 km of dykes throughout the whole country. Viet Nam has been constructing dykes on the Red River for over 1000 years. The seismograph was invented in China 1800 years ago; the rain gauge in Korea 500 years ago.

In recent years there has been a significant change in attitudes to natural disasters in the region. They are no longer accepted as inevitable; people are less fatalistic having higher expectations of their governments; they are becoming more self-sufficient and emphasis is on community-based responses. Perhaps most significantly of all, governments are beginning to tackle disaster mitigation in the context of development planning. A wide range of structural and non-structural measures for disaster mitigation are being implemented. Training programmes for disaster managers have blossomed. Regional cooperation, either through international agencies or bi-laterally, is on the increase.

One example of an innovative, and very successful, national disaster-related project is the Core shelter Programme of the Department of Social Welfare and Development in the Philippines. Conceived after a particularly bad cyclone in 1988, when thousands of houses were destroyed or damaged, the concept was simple: it is possible to build a low-cost house which will not blow away. With advice from the Asian Preparedness Centre at the Asian Institute of Technology in Bangkok, a design was prepared for a small, simple, timber-framed house which would withstand windspeeds of 180 km per hour. Local craftsmen were taught how to build them and they then supervised groups of families as they constructed them. The materials for each house cost only US$ 200. To date, more than 12 000 houses have been built and stood the test of subsequent cyclones. A UNDP official described the project as a perfect example of "bayanihan" - community self-help.

This is not to say, however, that any countries would claim that their disaster organizations are perfect (where in the world are they?) or that their disaster management organizations are yet fully self-sufficient. It is all too easy for observers parachuting in after a disaster to draw attention to things that went wrong, ignore what was done well, and to criticize. The truth is that after any big disaster anywhere in the world there is almost inevitably an initial period of confused information and muddled response; what differentiates the professionals from the others is the speed with which order is restored. The international community has played its part in helping countries to help themselves. Let us hope that their spirit of international cooperation in the face of adversity will continue throughout the International Decade for Natural Disaster Reduction.

WHD6/1991

SHOULD DISASTER STRIKE
BE PREPARED !

World Health Day, 7 April 1991

SILENT DISASTERS OF AFRICA

by Mrs Maniza S. Zaman, Official with the WHO Panafrican Centre for Emergency Preparedness and Response, Addis Ababa

A whole spectrum of disasters regularly afflict the African continent. In terms of the harm they do to communities, they can be roughly ranked in this order: famine, war and civil strife, displaced populations, floods, cyclones, earthquakes, and lastly epidemics. Always lurking behind these newsworthy events, and in part a consequence of them, are the "silent disasters" of Africa: chronic conditions of malnutrition, high death rates among children aged under five, a lack of health services and gross social inequality.

When disasters strike, people die or are injured, they lose their possessions and their homes; basic services may be interrupted, and recovery from such events call urgently for often scarce resources and time. And alongside the health, economic and social consequences come the short-term and long-term effects on the food situation. Thousands of families may face hunger because floods have washed away all food stocks, while their land has been devastated, and there are no savings or income to buy such food as is available.

It was with a view to counteracting some of these harmful effects that WHO's African Regional Office set up its Emergency Preparedness and Response Unit in 1987. The following year the Panafrican Centre for Emergency Preparedness and Response was created in Addis Ababa. The Centre offers training courses and also conducts operational research and policy analysis related to disasters and the chronic food crisis, as well as to the management of the health situation in times of disaster.

Most of the disasters that afflict Africa call for large-scale food relief programmes. Such nutritional emergencies are epitomised by the unforgettable images of famine victims who congregated at relief camps in Ethiopia and Sudan during the mid-1980s. Famine is a slowly developing phenomenon which may be triggered by drought, uncontrolled pest infestation or the threat of warfare.

Even though there may be various early warning indicators - such as low rainfall, dwindling food reserves, toppling market prices - it is only when local coping mechanisms and external aid have both failed that people start to die from malnutrition and starvation. During the last decade, such countries as Kenya, Botswana and Tanzania have responded promptly to indicators of emerging food crises, and by mobilising internal resources have succeeded in averting famine situations.

African countries are the host to more than 4,500,000 refugees, most of whom are fleeing from war situations or repressive regimes. The majority of them carry only the minimum of food needed for survival before reaching the host camp, and are thus totally dependent on external aid for survival. Feeding them remains one of the biggest challenges in the care and management of refugees.

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Wars and civil strife often lead more directly to food crises. Financial, material and human resources are diverted from agriculture to fuel the war, local markets are disrupted, people migrate within the country or become refugees, and relief efforts may be deliberately blocked.

The timing of a sudden disaster will have a critical bearing on the consequences. If it strikes during the lean pre-harvest period, communities will be more vulnerable than ever since food stocks will be low and people's nutritional status relatively poor.

Direct assistance in the form of food relief involves feeding or distribution of dry food rations. Sometimes only a short-term food distribution for not more than a few weeks may be called for in the wake of a disaster. Other situations require long-term food relief over months if not years (e.g. protracted emergency situations).

Even when food is physically available, famine conditions may arise simply because poor people do not have access to the supply. At-risk groups in such circumstances have to be helped, either through food-for-work schemes or by providing employment opportunities, for instance, on public works projects.

The most common problem to be faced is protein-energy malnutrition. Added to that may be specific vitamin and mineral deficiency diseases - for instance, scurvy due to lack of vitamin C, anaemia through lack or iron or folic acid, or blindness and illness caused by vitamin A deficiency.

Severe malnutrition rarely occurs in the immediate aftermath of disaster, but may develop slowly if preventive action is not taken. It usually arises among people subjected to long-term stress - where drought conditions lead to famine, or where refugees already facing chronic food shortages have to embark on long journeys.

Ideally it is best to avoid the formation of settlement camps in case they become permanent. But more often than not such camps develop spontaneously, and the responsibility for running them falls on the relief workers. WHO has recently developed rapid assessment protocols for use in different types of emergencies, so as to determine the severity of the problem, the adequacy of food access and the local response capability.

In the WHO publication "The Management of Nutritional Emergencies in Large Populations" four ways of food relief are recognised: general food distribution includes delivery of dry food to people (usually families) at regular intervals. Mass feeding means that prepared (cooked) food is served to everyone, usually in a camp setting. Supplementary feeding will ensure that extra rations reach groups more vulnerable to malnutrition such as children under the age of five years, pregnant or lactating women, old people in addition to the general rations or meals so that their particular needs are met. Therapeutic feeding will provide high-energy, high-protein foods for people - in particular infants and young children - suffering from severe protein-energy malnutrition.

One rule-of-thumb target is to provide an absolute minimum of 1,900 kilocalories per person per day, regardless of age. Of course, this figure needs to be augmented for people with infectious diseases (who need more calories), or if clothing and shelter are inadequate to keep people warm.

The Office of the UN High Commissioner for Refugees (UNHCR) recently issued strict policy guidelines about the acceptance, distribution and use of milk products in refugee

settings. All too often, the composition of food aid is more a reflection of the surpluses available in the industrialised world than of the needs of the target population. The nutritional composition of the aid then falls short of meeting specific vitamin and mineral requirements and may even create new hazards of deficiency diseases. There remains an urgent need to resolve the problem of providing nutritionally balanced and culturally acceptable rations to the beneficiaries of feeding programmes.

An important component of any relief operation is a system of epidemiological surveillance. This will enable health workers to quantify the problems, identify specific health problems or groups needing special assistance, set priorities and monitor the effectiveness of what is being done.

Finally, the management of relief has long since moved away from the notion of "givers" and "receivers." Instead the affected community must be involved as much as possible in decision-making and relief work. The ultimate yardstick to measure the success of a relief operation is whether the community has been able to recover at least to pre-disaster conditions, and is no longer dependent on external aid.

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PHOTO SHEET CAPTIONS

WHO 20857 That is probably their only meal for the day.

WHO 20858 High tech in action; a satellite image of a hurricane and a cyclone.

WHO 20859 Water can and does cause enormous devastations.

WHO 20134 Earthquake's raw power.

WHO 20860 Floods have affected nearly 350 million people in the 20th century.

WHO 20861 Access to make-shift hospitals greatly diminishes the number of casualties.

WHO 20862 Mental health problems take their heavy toll among refugees and displaced populations.

WHO 20863 Health services suffer to in earthquakes.

WHO 20864 Our century saw some 140 million people being forcibly uprooted.

WHO 18044 Chemical safety becomes increasingly important both for developed and developing countries.

WHO 20871 How many of the nearly 100 000 chemicals that exist in the world today are safe?

WHO 20872 WHO-organized seminar in Tunisia on disaster preparedness.

WHO 20873 Emergency drills are part and parcel of disaster preparedness efforts.

WHO 20874 Basic emergency kit.

WHO 20875 Treating casualties in an emergency field hospital.

WHO 20876 Fire-fighters are always on the cutting edge of disaster.

WHO 20865 "Do we need it?"- International aid should be more focused.

WHO 20866 For some people water is a matter of life or death.

WHO 20867 When disaster strikes it's the time factor that counts.

WHO 20868 Priority shipment. Logistics must be worked out well in advance

WHO 20869 Rapid deployment of resources.

WHO 20870 Aid has arrived not a moment too soon.

LEGENDE DES PHOTOS

WHO 20857 Très probablement le seul repas de la journée.

WHO 20858 Un exemple de haute technologie; photo satellite d'un ouragan et un cyclone.

WHO 20859 L'eau peut provoquer d'énormes dégâts, ce qui est le cas ici.

WHO 20134 Les effets dévastateurs d'un tremblement de terre.

WHO 20860 Au XXe siècle, quelque 350 millions de personnes ont été victimes d'inondations.

WHO 20861 L'installation d'hôpitaux de fortune diminue considérablement le nombre de victimes.

WHO 20862 Les maladies mentales prélèvent un lourd tribut parmi les réfugiés et les populations déplacées.

WHO 20863 Les services de santé subissent eux aussi le contrecoup des tremblements de terre.

WHO 20864 Au cours de ce siècle, quelque 140 millions de personnes ont été arrachées de force à leur foyer.

WHO 18044 La sécurité des installations chimiques revêt de plus en plus d'importance, tant dans les pays développés que dans les pays en développement.

WHO 20871 Sur les quelques 100 000 substances chimiques actuellement dénombrées dans le monde, combien offrent des garanties de sécurité?

WHO 20872 Séminaire organisé par l'OMS en Tunisie sur la préparation aux catastrophes.

WHO 20873 Les exercices de secours font partie de la préparation aux catastrophes.

WHO 20874 Nécéssaire de base pour les soins d'urgence.

WHO 20875 Soins aux victimes dans un hôpital de campagne pour les secours d'urgence.

WHO 20876 La lutte contre le feu vient toujours au premier rang en cas de catastrophe.

WHO 20865 "De quoi avons-nous besoin?" - L'aide internationale doit porter sur des objectifs plus précis.

WHO 20866 Pour certaines personnes, l'eau est une question de vie ou de mort.

WHO 20867 En cas de catastrophe, c'est la rapidité d'intervention qui compte le plus.

WHO 20868 Envoi prioritaire. La logistique doit être prête longtemps à l'avance.

WHO 20869 Déploiement rapide des moyens.

WHO 20870 Les secours sont arrivés à point.

DISASTER STRIKES!!

Test your knowledge and ability to react appropriately

Comment on the following statements by ticking either True or False and then turn to the correct answers and work out your score.

1

In case of disaster, send out an immediate appeal for international medical personnel.

True ☐ False ☐

2

When a disaster occurs, people in other countries should not react by immediately organizing the collection and despatch of whatever can be obtained in the way of medicines, clothing, equipment, etc.

True ☐ False ☐

3

A few weeks after a disaster occurs, things are usually back to normal and most of the major services are restored.

True ☐ False ☐

4

Disasters cause fewer deaths in rich countries than in poor countries.

True ☐ False ☐

5

Disasters bring out the worst in human behaviour.

True ☐ False ☐

6

When disaster strikes, outbreaks of infectious diseases are inevitable due to the presence of unattended dead bodies.

True ☐ False ☐

7

Mass hunger can be avoided after a disaster strikes.

True ☐ False ☐

8

Following a disaster, it is best to house people as close as possible to their own dwellings rather than in settlement camps.

True ☐ False ☐

9

In case of limited food supplies following a disaster, priority should be given to the young and the old.

True ☐ False ☐

10

When disaster strikes, each individual should take care of his own family and belongings first.

True ☐ False ☐

11

The intensity of two recent earthquakes in Armenia and San Francisco was the same but in Armenia several thousand died whereas in San Francisco sixty people died. This is mainly due to the difference in earthquake-proof construction.

True ☐ False ☐

12

The Sahelian drought is caused by a combination of climatic and man-made factors.

True ☐ False ☐

Correct Answers

Calculate your score by counting 10 points if you answered correctly and 0 points if your answer was wrong.

1. **False** Local health services are normally able to cope in case of disaster. They have the advantage of speaking the local language and are familiar with the health service infrastructure. Foreign teams may provide specialized skills and equipment, but they have to be housed and fed.

2. **True** A fast international response to disasters is not necessarily the best solution. An evaluation of the most urgent needs should first be made so that communication channels do not become blocked by unessential items or by outdated medicaments and food products.

3. **False** Whilst the disaster may disappear from the news headlines, the impact may last for years. There is often permanent damage to water supplies and health services; reconstruction and rehabilitation are time-consuming and costly.

4. **True** Poverty leads to poor living conditions and the poor are more vulnerable in case of disaster. The richer countries have the resources with which to rebuild their lives and are usually better prepared.

Por cortesía del Diario El País / Autor: José María Ponce

5. **False** Whilst some sensation-seeking scribes might encourage us to believe that looting and other forms of selfish behaviour are common following disasters, on the contrary, it has been shown that disaster situations bring out the best in people and solidarity is strengthened.

6. **False** Dead bodies do not cause epidemics or disease transmission during the first 72 hours; after this, the decomposition process may cause contamination of water supplies. First priority following a disaster should be to care for the injured.

7. **True** Disasters such as earthquakes do not damage crops although drought, hurricanes and floods do. However, if adequate preparations such as storage and rationing of foods have been properly organized, there should not be any serious hunger. When international assistance is requested, seeds and tools are often more important than food.

8. **True** Keeping people as close to their homes as possible is best; settlement camps should be a last resort since they create other problems. International assistance in the form of building materials and tools may be desirable.

9. **False** Careful rationing should be organized so that everyone is fed. Those involved in salvage work and reconstruction are particularly in need of a regular food supply.

10. **False** Team work is the most efficient way of dealing with the aftermath of disaster. Training of teams prior to a disaster so that each person knows his or her responsibilities is indispensable for the proper management of a disaster.

11. **True** Strict adherence to the building code in earthquake-prone areas significantly diminishes the loss of human life.

12. **True** Overgrazing, a failure to plant trees and mismanagement of land use lead to soil erosion. In the Sahel, when added to the effects of climate change, all this means an advance of the desert.

Result

Since the beginning of time, our fragile earth has suffered and will continue to suffer from disasters, both natural and man-made. The disasters themselves may not be preventable but the unnecessary toll of death and injuries can be mitigated.

The points raised in this test are, of course, not exhaustive but they do cover some of the situations you may encounter in times of disaster.

If you scored 90 or more points: Bravo! Your reactions are excellent. Your participation in preparedness and response activities would be invaluable.

If you scored between 50 and 90 points: You have understood most of the important priorities but your reaction and knowledge can still be improved.

If you scored less than 50 points: You are on the right road and full of good intentions, but your knowledge of how to deal with disaster situations needs to be improved.

Test created by Dorothy Hoffmann and Gilbert Padey, WHO, Geneva, Switzerland

WORLD HEALTH ORGANIZATION
Geneva, Switzerland

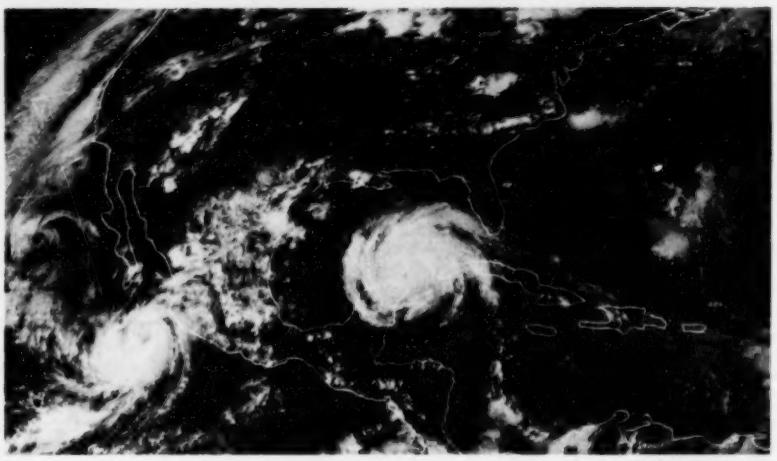
SHOULD DISASTER STRIKE – BE PREPARED!

LES CATASTROPHES FRAPPENT SANS PRÉVENIR – SOYONS PRÊTS!

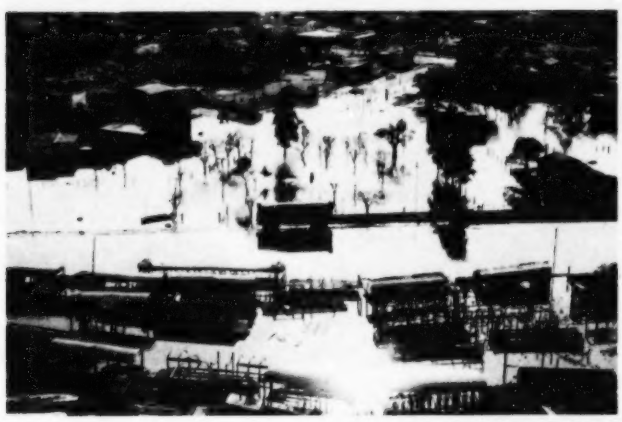
ILLUSTRATIONS

WORLD HEALTH DAY ■ 7 APRIL 1991 ■ JOURNÉE MONDIALE DE LA SANTÉ ■ 7 AVRIL 1991

WHO 20857 / L. de Toledo - LRCS*



WHO 20858 / UNDRO



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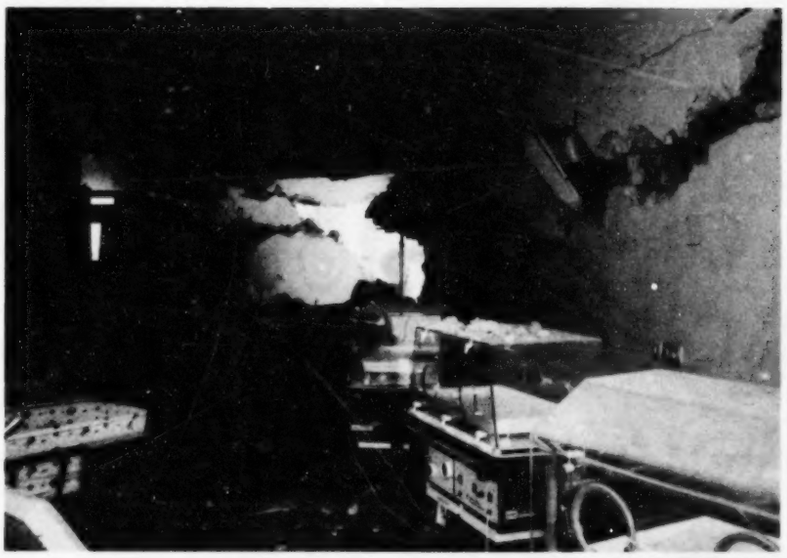


WHO 20863 / O. ELO*

When disasters strike ...

Quand les catastrophes frappent ...

WHO 20864 / M. Vanappelghem

WHO 18044 / PUBLIFOTO

WHO 20871 / UK Central Office of Information

WHO 20872 / J. P. Revel - CRED*

Disaster preparedness
Préparation aux catastrophes

WHO 20873 / PAHO*

WHO 20874 / Int. Dispensary Assoc.

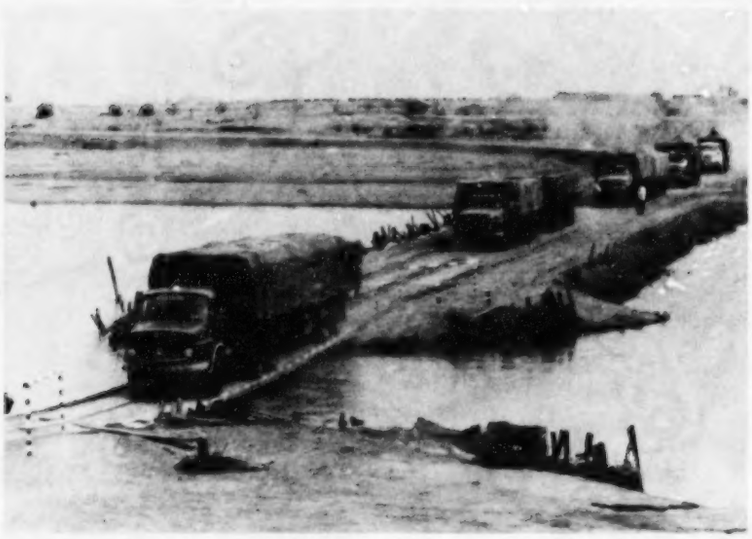
WHO 20875 / PAHO*

WHO 20876 / J. Vizcarra - PAHO*

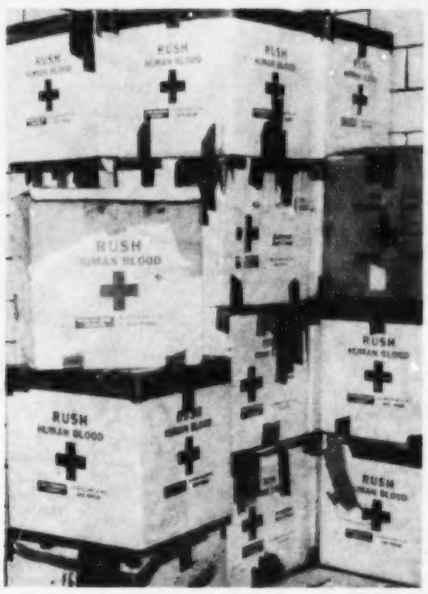
WHO 20865*

WHO 20866 / J. P. Revel - CRED*

Disaster relief
Secours en cas de catastrophe



WHO 20867 / J. Hartley - OXFAM*



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